

Application Serial No. 10/049,948
Amendment dated July 26, 2004
Reply to Office Action dated March 26, 2004

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1-20 (canceled)

Claim 21 (new): An apparatus for continuous melting and refining of glasses or glass ceramics comprising:

- a melting vessel;
- a refining vessel configured as a skull crucible;
- a high frequency induction coil enclosing the walls of the refining vessel for coupling high frequency energy into contents of the refining vessel;
- a connecting line connected to a floor zone of the melting vessel and to a floor zone of the refining vessel to transfer melt from the melting vessel to the refining vessel; and
- a leak-proof glass seal located at a connection point of the connection line to the refining vessel, said seal being electrically shunted to ground potential.

Claim 22 (new): An apparatus as claimed in claim 21, wherein the connecting line emerges laterally from the floor zone of the melting vessel and enters the refining vessel through the floor zone of the refining vessel.

Claim 23 (new): An apparatus as claimed in claim 21, including a cooling groove provided downstream of the refining vessel.

Claim 24 (new): An apparatus as claimed in claim 21, including a stirring crucible provided downstream of the cooling groove.

Claim 25 (new): An apparatus as claimed in claim 21, wherein the melting vessel and/or the refining vessel are disposed within a conductive screening cage.

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Claim 26 (new): A method for continuous melting and refining of inorganic compounds, comprising:

melting the inorganic compound in a melting vessel;

supplying melt from the melting vessel to a refining vessel configured as a skull crucible wherein the melt is heated to a temperature above 1560°C, the melt being supplied continuously from the melting vessel to the refining vessel via a connecting line which connects a floor zone of the melting vessel to a floor zone of the refining vessel;

the melt flowing from the floor zone of the refining vessel to an upper zone of the refining vessel and then directed via a cooling groove to a stirring vessel.

Claim 27 (new): A method as claimed in claim 26, wherein the melt level in the melting vessel, in the refining vessel, in the cooling groove and in the stirring crucible are at one and the same level.

Claim 28 (new): A method as claimed in claim 26, wherein the melting vessel is made of ceramic stone material, platinum or a platinum alloy.

Claim 29 (new): A method as claimed in claim 26, wherein the melting vessel comprises a skull crucible and the melt is heated in the melting vessel by means of high frequency.

Claim 30 (new): A method as claimed in claim 26, wherein the connecting line between the melting vessel and the refining vessel is heatable pipe made of platinum or stone.

Claim 31 (new): A method as claimed in claim 26, wherein the refining vessel comprises a ceramic crucible and the melt is heated in the refining vessel by means of high frequency.

Claim 32 (new): A method as claimed in claim 26, wherein the refining vessel comprises a skull crucible and the melt is heated in the refining vessel by means of high frequency.

Claim 33 (new): A method as claimed in claim 26, wherein the melt is cooled in the cooling groove from the refining temperature in the refining vessel to 1500°C to 1150°C in the case

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of a platinum stirring crucible or to 1500°C to 1650°C in the case of a stirring crucible which is made of ceramic material.

Claim 34 (new): A method as claimed in claim 26, wherein the inorganic material to be refined are glasses free of toxic refining agents such as As_2O_3 or Sb_2O_3 .